



Journal of Hydrodynamics

[Guide for Authors](#)

[Submit Your Paper](#)

[Order Journal](#)

[View Articles](#)

[Recent Articles](#)

[Most Downloaded Articles](#)

[Most Cited Articles](#)

Stay up-to-date

Register your interests and receive email alerts tailored to your needs

[Click here to sign up](#)

Follow us

Most Downloaded Journal of Hydrodynamics Articles

The most downloaded articles from [ScienceDirect](#) in the last 90 days.

1. Hydrodynamics of marine and offshore structures

1 January 2015

O.M. FALTINSEN

An overview of hydrodynamic problems related to the broad variety of ships and sea structures involved in transportation, oil and gas exploration and production, marine operations, recovery of oil-spill,...



2. Recent progress in CFD for naval architecture and ocean engineering

February 2015

Frederick STERN | Zhaoyuan WANG | Jianming YANG | Hamid SADAT-HOSSEINI | Maysam MOUSAVIRAAD | Shanti BHUSHAN | Matteo DIEZ | Sung-Hwan YOON | Ping-Chen WU | Seong Mo YEON | Timur DOGAN | Dong-Hwan KIM | Silvia VOLPI | Michael CONGER | Thad MICHAEL | Tao XING | Robert S. THODAL | Joachim L. GRENESTEDT

An overview is provided of CFDShip-*lowa* modeling, numerical methods and high performance computing (HPC), including both current V4.5 and V5.5 and next generation V6. Examples for naval architecture...



3. Wind-wave induced dynamic response analysis for motions and mooring loads of a spar-type offshore floating wind turbine

1 January 2015

Yu MA | Zhi-qiang HU | Long-fei XIAO

Due to the energy crisis and the environmental issues like pollution and global warming, the exploration for renewable and clean energies becomes crucial. The offshore floating wind turbines (OFWTs)...



4. Interactions between vegetation, water flow and sediment transport: A review

February 2015

Chao WANG | Sha-sha ZHENG | Pei-fang WANG | Jun HOU

The vegetation, as one of the most important components, plays a key role in the aquatic environment. This paper reviews recent progress on the complex interaction between the vegetation and the water...



5. Effects of vegetations on the removal of contaminants in aquatic environments: A review

1 September 2014

Chao WANG | Sha-sha ZHENG | Pei-fang WANG | Jin QIAN

This paper reviews the removal of contaminants including nutrients, metals and organic pollutants by vegetations in aquatic environments. The removal efficiencies are considered with respect to 16,...



6. Water hammer in the pump-rising pipeline system with an air chamber

1 January 2015

Sang-Gyun KIM | Kye-Bock LEE | Kyung-Yup KIM

Water hammer following the tripping of pumps can lead to overpressure and negative pressure. Reduction in overpressure and negative pressure may be necessary to avoid failure, to improve the efficiency...



7. An analysis of dam-break flow on slope

1 January 2015

Li-hui WANG | Cun-hong PAN

The one-dimensional steep slope shallow water equations are used to model the dam-break flow down a uniform slope with arbitrary inclination, and analytical solutions are derived by the hodograph transformation...



8. Finite Element Numerical Simulation of Three-Dimensional Seepage Control for Deep Foundation Pit Dewatering

October 2008

Zu-jiang LUO | Ying-ying ZHANG | Yong-xia WU

For deep foundation pit dewatering in the Yangtze River Delta, it is easy to make a dramatic decrease of the underground water level surrounding the dewatering area and cause land subsidence and geologic...



9. The mechanical response of piles with consideration of pile-soil interactions under a periodic wave pressure

1 January 2015

Huan-ling WANG | Wei-ya XU | Feng ZHU

The pile-soil interaction under wave loads is an extremely complex and difficult issue in engineering. In this study, a physical model test is designed based on the principle of the gravity similarity...



10. Numerical simulation and experimental study of drag-reducing surface of a real shark skin

April 2011

De-yuan ZHANG | Yue-hao LUO | Xiang LI | Hua-wei CHEN

It is well known that shark skin surface can effectively inhibit the occurrence of turbulence and reduce the wall friction, but in order to understand the mechanism of drag reduction, one has to solve...



11. Hydrodynamic optimization of a triswach

1 January 2015

Chi YANG | Fuxin HUANG | Hyunyul KIM

A new methodology for hydrodynamic optimization of a TriSWACH is developed, which considers not only the positions of the side hulls but also the shape of the side hulls. In order to account for the...



12. Experimental study of flow field in interference area between impeller and guide vane of axial flow pump

1 January 2015

Hua ZHANG | Wei-dong SHI | Bin CHEN | Qi-hua ZHANG | Wei-dong CAO

Axial flow pump is a kind of typical pumps with rotor-stator interaction, thus the measurement of the flow field between impeller and guide vane would facilitate the study of the internal rotor-stator...



13. Performance of the bio-inspired leading edge protuberances on a static wing and a pitching wing

1 January 2015

Ya-yun WANG | Wen-rong HU | Shi-dong ZHANG

It is shown that the leading edge protuberances on the flippers of a humpback whale can significantly improve the hydrodynamic performance. The present study numerically investigates the flow control...



14. Non-spherical multi-oscillations of a bubble in a compressible liquid

1 January 2015

Qian-xi WANG | Yuan-xiang YANG | Danielle Sweimann TAN | Jian SU | Soon Keat TAN

Bubble dynamics are associated with wide and important applications in cavitation erosion in many industrial systems, medical ultrasonics and underwater explosions. Two recent developments to this classical...



15. Hydrodynamic performance of distributed pump-jet propulsion system for underwater vehicle

1 September 2014

Xiao-jun LÜ | Qi-dou ZHOU | Bin FANG

A type of distributed pump-jet propulsion system (DPJP) is developed with two or four specially designed pump-jet pods located around the axisymmetric underwater vehicle body symmetrically. The flow...



16. A novel design of composite water turbine using CFD

February 2012

Ji-feng WANG | Janusz PIECHNA | Norbert MÜLLER

This paper presents computational investigation of a novel design of composite material axial water turbine using Computational Fluid Dynamics (CFD). Based on three-dimensional numerical flow analysis,...



17. Numerical prediction of 3-D periodic flow unsteadiness in a centrifugal pump under part-load condition

April 2014

Ji PEI | Shou-qi YUAN | Xiao-jun LI | Jian-ping YUAN

Numerical simulation and 3-D periodic flow unsteadiness analysis for a centrifugal pump with volute are carried out in whole flow passage, including the impeller with twisted blades, the volute and...



18. Influences of soil hydraulic and mechanical parameters on land subsidence and ground fissures caused by groundwater exploitation

February 2014

Xing-xian CHEN | Zu-jiang LUO | Shi-ling ZHOU

In order to study the influences of hydraulic and mechanical parameters on land subsidence and ground fissure caused by groundwater exploitation, based on the Biot's consolidation theory and combined...



19. Numerical simulation of rotating arm test for prediction of submarine rotary derivatives

February 2015

Yu-cun PAN | Qi-dou ZHOU | Huai-xin ZHANG

The numerical method is used for predicting the rotary-based hydrodynamic coefficients of a submarine. Unsteady RANS simulations are carried out to numerically simulate the rotating arm test performed...



20. Wave-induced flow and its influence on ridge erosion and channel deposition in Lanshayang channel of radial sand ridges

1 January 2015

Zhuo XU | Wei ZHANG | Pei-dong LU | Xiang AN | Ke-feng CHEN

Very limited modeling studies were available of the wave-induced current under the complex hydrodynamic conditions in the South Yellow Sea Radial Sand Ridge area (SYRSR). Partly it is due to the difficulties...



21. Extreme wave loads on submerged water intakes in shallow water

February 2015

Andrew CORNETT | Mark HECIMOVICH | Ioan NISTOR

This paper provides new guidance concerning the hydrodynamic loads on submerged intake structures located in shallow water under breaking and non-breaking waves. Results from a series of experiments...



22. A fast Lagrangian simulation method for flow analysis and runner design in Pelton turbines

December 2012

John S. ANAGNOSTOPOULOS | Dimitris E. PAPANTONIS

In the present work, an alternative numerical methodology is developed for a fast and effective simulation and analysis of the complex flow and energy conversion in Pelton impulse hydro turbines. The...



23. Multi-point design optimization of hydrofoil for marine current turbine

October 2014

Xing-qi LUO | Guo-jun ZHU | Jian-jun FENG

The comprehensive performance of the marine current turbine is an important issue in the ocean energy development. Its key is the performance of the hydrofoil, which is used to form the turbine blade....



24. Flow and heat transfer characteristics around egg-shaped tube

February 2015

Guan-min ZHANG | Xue-li LENG | Nai-xiang ZHOU | Yan-ping SHI | Li-min LI

This paper studies the flow and heat transfer characteristics around a new type of egg-shaped tubes made up of a semicircle upstream and a semi-ellipse downstream, numerically and experimentally, for...



25. Run-up of non-breaking double solitary waves with equal wave heights on a plane beach

1 January 2015

Jie DONG | Ben-long WANG | Hua LIU

The evolution and run-up of double solitary waves on a plane beach were studied numerically using the nonlinear shallow water equations (NSWEs) and the Godunov scheme. The numerical model was validated...

